(b) The State agency having jurisdiction over pipeline safety in the State in which the portable LNG equipment is to be located must be provided with a location description for the installation at least 2 weeks in advance, including to the extent practical, the details of siting, leakage containment or control, fire fighting equipment, and methods employed to restrict public access, except that in the case of emergency where such notice is not possible, as much advance notice as possible must be provided.

[Amdt. 193–14, 62 FR 41311, Aug. 1, 1997, as amended by Amdt. 193–18, 11336, Mar. 10, 2004]

Subpart B—Siting Requirements

§ 193.2051 Scope.

Each LNG facility designed, constructed, replaced, relocated or significantly altered after March 31, 2000 must be provided with siting requirements in accordance with the requirements of this part and of NFPA 59A (incorporated by reference, *see* § 193.2013). In the event of a conflict between this part and NFPA 59A, this part prevails.

[Amdt. 193–17, 65 FR 10958, Mar. 1, 2000, as amended by Amdt. 193–18, 69 FR 11336, Mar. 10, 2004]

§ 193.2055 [Reserved]

§ 193.2057 Thermal radiation protection.

Each LNG container and LNG transfer system must have a thermal exclusion zone in accordance with section 2.2.3.2 of NFPA 59A (incorporated by reference, *see* § 193.2013) with the following exceptions:

(a) The thermal radiation distances must be calculated using Gas Technology Institute's (GTI) report or computer model GTI–04/0032 LNGFIRE3: A Thermal Radiation Model for LNG Fires (incorporated by reference, *see* § 193.2013). The use of other alternate models which take into account the same physical factors and have been validated by experimental test data may be permitted subject to the Administrator's approval.

(b) In calculating exclusion distances, the wind speed producing the maximum exclusion distances shall be used except for wind speeds that occur less than 5 percent of the time based on recorded data for the area.

(c) In calculating exclusion distances, the ambient temperature and relative humidity that produce the maximum exclusion distances shall be used except for values that occur less than five percent of the time based on recorded data for the area.

[Amdt. 193–17, 65 FR 10958, Mar. 1, 2000, as amended by Amdt. 193–18, 69 FR 11336, Mar. 10, 2004; Amdt. 193– 22, 75 FR 48604, Aug. 11, 2010]

§ 193.2059 Flammable vapor-gas dispersion protection.

Each LNG container and LNG transfer system must have a dispersion exclusion zone in accordance with sections 2.2.3.3 and 2.2.3.4 of NFPA 59A (incorporated by reference, *see* § 193.2013) with the following exceptions:

(a) Flammable vapor-gas dispersion distances must be determined in accordance with the model described in the Gas Research Institute report GRI–89/0242 (incorporated by reference, *see* § 193.2013), ''LNG Vapor Dispersion Prediction with the DEGADIS Dense Gas Dispersion Model.'' Alternatively, in order to account for additional cloud dilution which may be caused by the complex flow patterns induced by tank and dike structure, dispersion distances may be calculated in accordance with the model described in the Gas Research Institute report GRI–96/0396.5 (incorporated by reference, *see* § 193.2013), ''Evaluation of Mitigation Methods for Accidental LNG Releases. Volume 5: Using FEM3A for LNG Accident Consequence Analyses''. The use of alternate models which take into account the same physical factors and have been validated by experimental test data shall be permitted, subject to the Administrator's approval.

(b) The following dispersion parameters must be used in computing dispersion distances:

(1) Average gas concentration in air = 2.5 percent.

(2) Dispersion conditions are a combination of those which result in longer predicted downwind dispersion distances than other weather conditions at the site at least 90 percent of the time, based on figures maintained by

National Weather Service of the U.S. Department of Commerce, or as an alternative where the model used gives longer distances at lower wind speeds, Atmospheric Stability (Pasquill Class) F, wind speed = 4.5 miles per hour (2.01 meters/sec) at reference height of 10 meters, relative humidity = 50.0 percent, and atmospheric temperature = average in the region.

(3) The elevation for contour (receptor) output H = 0.5 meters.

(4) A surface roughness factor of 0.03 meters shall be used. Higher values for the roughness factor may be used if it can be shown that the terrain both upwind and downwind of the vapor cloud has dense vegetation and that the vapor cloud height is more than ten times the height of the obstacles encountered by the vapor cloud.

(c) The design spill shall be determined in accordance with section 2.2.3.5 of NFPA 59A (incorporated by reference, *see* §193.2013).

[Amdt. 193–17, 65 FR 10959, Mar. 1, 2000, as amended by Amdt. 193–18, 69 FR 11336, Mar. 10, 2004]

§§ 193.2061–193.2065 [Reserved]

§ 193.2067 Wind forces.

(a) LNG facilities must be designed to withstand without loss of structural or functional integrity:

(1) The direct effect of wind forces;

(2) The pressure differential between the interior and exterior of a confining, or partially confining, structure; and

(3) In the case of impounding systems for LNG storage tanks, impact forces and potential penetrations by wind borne missiles.

(b) The wind forces at the location of the specific facility must be based on one of the following:

(1) For shop fabricated containers of LNG or other hazardous fluids with a capacity of not more than 70,000 gallons, applicable wind load data in ASCE/SEI 7–05 (incorporated by reference, *see* §193.2013).

(2) For all other LNG facilities:

(i) An assumed sustained wind velocity of not less than 150 miles per hour, unless the Administrator finds a lower velocity is justified by adequate supportive data; or

(ii) The most critical combination of wind velocity and duration, with respect to the effect on the structure, having a probability of exceedance in a 50-year period of 0.5 percent or less, if adequate wind data are available and the probabilistic methodology is reliable.

[45 FR 9203, Feb. 11, 1980, as amended by Amdt. 193–1, 45 FR 57419, Aug. 28, 1980; 58 FR 14522, Mar. 18, 1993; Amdt. 193–16, 63 FR 37505, July 13, 1998; Amdt. 193–17, 65 FR 10959, Mar. 1, 2000; Amdt. 193–19, 71 FR 33409, June 9, 2006; Amdt. 193–22, 75 FR 48604, Aug. 11, 2010]

§§ 193.2069–193.2073 [Reserved]

Subpart C—Design

§ 193.2101 Scope.

(a) Each LNG facility designed after March 31, 2000 must comply with requirements of this part and of NFPA 59A (2001) (incorporated by reference, *see* §193.2013). If there is a conflict between this Part and NFPA 59A, this part prevails. Unless otherwise specified, all references to NFPA 59A in this Part are to the 2001 edition.

(b) Stationary LNG storage tanks must comply with Section 7.2.2 of NFPA 59A (2006) (incorporated by reference, *see* §193.2013) for seismic design of field fabricated tanks. All other LNG storage tanks must comply with API Standard 620 (incorporated by reference, *see* §193.2013) for seismic design.

[Amdt. 193–22, 75 FR 48604, Aug. 11, 2010]

MATERIALS

§§ 193.2103–193.2117 [Reserved]

§ 193.2119 Records

Each operator shall keep a record of all materials for components, buildings, foundations, and support systems, as necessary to verify that material properties meet the requirements of this part. These records must be maintained for the life of the item concerned.